Model ATC-3000
TCP/IP to RS232/422/485 Converter

User's Manual



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Important Announcement

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1. Introduction

Many industrial and Commercial devices equipped with slow serial communication ports RS-232, RS-485, and RS-422 are limited in their transmission distance of 15 m. Examples of these devices are PLC controllers, card readers, display signs, security controls, CNC controller, etc. The ATC-3000 is designed to transmit data between serial device and TCP/IP device through Ethernet, and hence enhance the accessibility of the serial device through the ubiquitous TCP/IP based Ethernet.

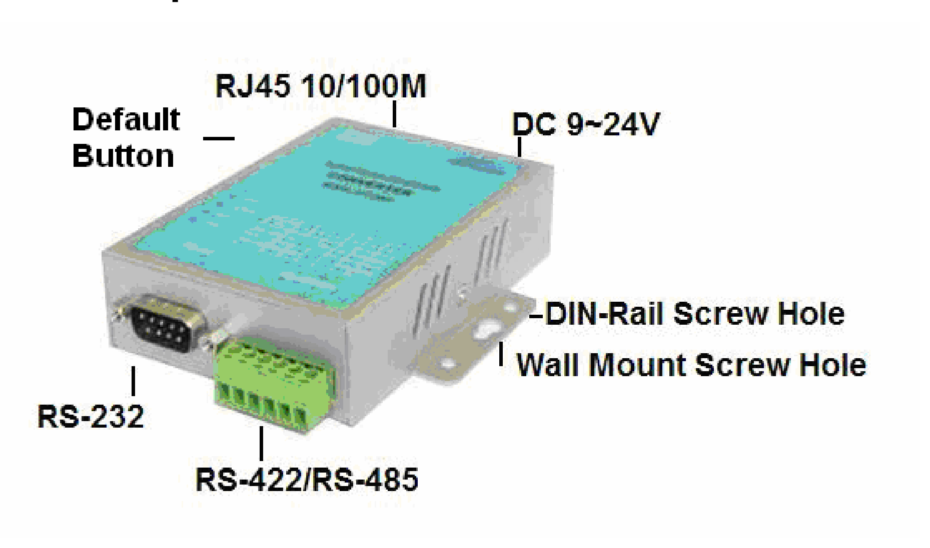
ATC-3000 offers full-duplex, bi-directional data transmission transparent between serial port and Ethernet network. Flexible configuration options enable this unit to be setup over Web browser, or other Windows utilities. Packed in a rugged metal housing for wall or DIN-Rail mount with 9~24VDC wide power input range, ATC-3000 is ideal for almost any industrial and manufacturing automation.

Packaging

Please check ones package contains the following items:

- ATC-3000 x 1
- Power Adapter 9~24VDC x 1
- Product CD containing configuration utility x 1
- ATC-3000 TCP/IP to RS-232/422/485 converter quick start guide x 1

2. Hardware Setup



2.1 LED Indicators

2.1.1 LINK LED

Message	Description
Off	Ethernet Disconnected
On	Ethernet Connected

Table 1. LINK LED Message

2.1.2 ACT LED

Message	Description
Off	No data is transmitting between Ethernet and serial port
Blinking	Data is transmitting between Ethernet and serial port

Table 2. ACT LED Message

2.1.3 SPEED LED

Message	Description
On	Ethernet is working in 100Mbps
Off	Ethernet is working in 10Mbps

Table 3. SPEED LED Message

2.1.4 PWR LED

Message	Description
On	Power on
Off	Power off

Table4. PWR LED Message

2.2 Installation Procedures

Step 1: Connect ATC-3000 to power source using 9~24V DC Jack.

Step 2: Connect ATC-3000 to Ethernet network. Use a standard straight-through Ethernet cable when one connect it to a hub/switch, one also can connect it to ones PC's Ethernet port via a cross-over Ethernet cable for easy set up. However, in this case one need to make sure ones PC is in the same network sub-net as ATC-3000.

Step 3: Connect ATC-3000's serial port to a serial device.

Step 4: Placement options. One can mount ATC-3000 to a wall/panel (Mounting screws included) or Din-Rail rack.

3. Software Setup

ATC-3000 is shipped with default settings shown in the following table:

Property	Default Value
IP Address	**192.168.0.250**
Gateway	**192.168.0.1**

Subnet Mask	**255.255.255.0**
User Name	**admin**
Password	**admin**
COM 1	9600,None, 8, 1, No flow control, Pack Control disabled, Buffer disabled
Link 1	Type: TCP Client, Listen port 27010, remote host=0.0.0.0

3.1 Configuration by Telnet

You can use Telnet utility to change configuration settings of ATC-3000 by following steps ：

3.1.1 Login to the System

Open Ms-DOS command prompt window

Telnet to ATC-3000 using command "**Telnet IP address**". (For example：Input **Telnet 192.168.0.250** in Ms-DOS command prompt window).After telnet to ATC-3000, system prompts for a password, the default password is left it blank. (Figure 3.1)

```
Telnet 192.168.0.250
name:admin
password:_
```

Figure3. 1 Login to the system

Note: One can press the default button of ATC-3000 to reset the password to the default value.

After verifying the password, the following terminal screen appears.(Figure 3.2)

```
Telnet 192.168.0.250

----------------------------------
<<Main Menu>>
<1> Basic settings
<2> Connection 0 settings
<3> Network settings
<4> Hostlist 0 settings
<5> Serial 0 settings
<6> Load factory default
<7> User manage
<v> View settings
<s> Save and Reboot
<q> quit


key in your selection:_
```

Figure3. 2 Main menu

Note: Changes to networking parameters will take effect only when one save and reboot ATC-3000.

Select "**1**" from "**Input choice and enter (1~7 or v s q):**" to enter show basic settings page as following.(Figure 3.3)

```
Telnet 192.168.0.250
<<Main Menu->Basic settings>>
<1> Server name [NB-SL485]
<2> Time Zone [(GMT+08:00)Beijing, Chongqing, Hong Kong, Urumchi]
<3> Local Time [2002/1/10/12:20:30]
<4> Timer server [ntp0.pipex.net]
<5> Web Console [Enable]
<6> Telnet Console [Enable]
        Terminal Type[VT100]
<m> Back to main menu
<q> quit


key in your selection:
```

Figure3. 3 Basic settings

This page gives you the general information of ATC-3000.

3.1.2 Connection 0 setting

Select "**2**" from "**Input choice and enter (1~7 or v s q):**" to enter show Connection 0 setting page as following. (Figure3.4)

```
Telnet 192.168.0.250

------------------------------------
<<Main Menu->Connection 0 settings>>
<1> TCP [*]
<2> UDP
<m> Back to main menu
<q> quit


key in your selection:
```

Figure3. 4 Connection 0 setting

In this page you can change the network mode of ATC-3000.And then you can configuration the parameters of the mode which you choice. Figure 3.5 and figure 3.6 show the configuration page.

```
Telnet 192.168.0.250
<<Main Menu->Connection 0 ->tcp>>
<1> Accept incoming [Y]
<2> Active connect [None]
<3> Start character []
<4> Local port [27010]
<5> Remote port [0]
<6> Remote host [0.0.0.0]
<7> Dns query period [1800]
<8> Connect Response: [None]
<9> Use Hostlist: [N]
<a> Disconnect Mode
        On DSR Drop: [N]
        Hard Disconnect: [N]
        Check EOT<Ctr-D>: [N]
        Inactivity Timeout: [4:15]
<m> Back to main menu
<q> quit

key in your selection:_
```

Figure 3. 5 Tcp configuration page

```
Telnet 192.168.0.250

----------------------------------
<<Main Menu->Connection 0 ->udp>>
<1> Accept incoming [Y]
<2> Datagram type [Uni Cast]
<m> Back to main menu
<q> quit


key in your selection:
```

Figure3. 6 Udp configuration page

3.1.3 Network Settings

Select “**3**” from “**Input choice and enter (1~7 or v s q):**” to enter show Network setting page as following. (Figure 3.7)

```
Telnet 192.168.0.250
key in your selection:3
-----------------------------------
<<Main Menu->Network settings>>

<1> Use static IP address [*]
<2> Obtain IP automatically

--Ethernet Configuration--
<3> speed/duplex auto negotiate [*]
<4> 100 Mbps,Full Duplex
<5> 100 Mbps,Half Duplex
<6> 10 Mbps,Full Duplex
<7> 10 Mbps,Half Duplex
<8> Modify Mac Address [00.f0.0a.05.42.b4]

--HTTP Server--
<9> HTTP Server Port [80]

<m> Back to main menu
<q> quit

key in your selection:
```

Figure3. 7 Network settings page

3.1.3.1 Static IP setting

Select “**1**” from “**Input choice and enter (1~9 or m q):**” to enter show Static IP setting page as following. (Figure 3.8)

```
Telnet 192.168.0.250
<1> Ip address [192.168.0.250]
<2> Subnet mask [255.255.255.0]
<3> Default gateway [192.168.0.1]
<4> Prefered DNS Server [192.168.0.1]
<5> Alternate DNS Server [192.168.0.1]
<m> Back to main menu
<q> quit


key in your selection:_
```

Figure3. 8 Static IP setting page

In this page you can change the static IP address, subnet mask, default gateway and some other parameters.

3.1.3.2 Auto IP setting

Select “**2**” from “**Input choice and enter (1~9 or m q):**” to enter show Static IP setting page as following. (Figure 3.9)

```
<<Main Menu->Network settings>>
<1> BOOTP enable
<2> DHCP enable
<3> AutoIP enable
<4> DHCP host name []
<m> Back to main menu
<q> quit


key in your selection:_
```

Figure3. 9 Auto IP setting page

3.1.3.3 Ethernet configuration

Select the No. between 3 and 8 from "**Input choice and enter (1~9 or m q):**" to enter show Ethernet configuration page.

3.1.4 Hostlist 0 Settings

Select "**4**" from "**Input choice and enter (1~7 or v s q):**" to enter show Hostlist 0 setting page as following. (Figure 3.10)

3.1.5 Serial 0 Settings

Select "**5**" from "**Input choice and enter (1~7 or v s q):**" to enter show Serial 0 setting page as following. (Figure 3.11)

```
Telnet 192.168.0.250
key in your selection:4
-----------------------------------
<<Main Menu->Hostlist  0  setting>>

<1> Retry Counter [0]
<2> Retry Timeout [0]
<3> Host1 [0.0.0.0:0]
<4> Host2 [0.0.0.0:0]
<5> Host3 [0.0.0.0:0]
<6> Host4 [0.0.0.0:0]
<7> Host5 [0.0.0.0:0]
<8> Host6 [0.0.0.0:0]
<9> Host7 [0.0.0.0:0]
<a> Host8 [0.0.0.0:0]
<b> Host9 [0.0.0.0:0]
<c> Host10 [0.0.0.0:0]
<d> Host11 [0.0.0.0:0]
<e> Host12 [0.0.0.0:0]
<f> backup link [disable]
<m> Back to main menu
<q> quit
key in your selection:_
```

Figure 3. 10 Hostlist 0 setting

```
Telnet 192.168.0.250

-----------------------------------
<<Main Menu->Serial port 0 settings>>
<1> Enable Serial Port [Y]
<2> Protocol [RS232]
<3> Baud rate [9600]
<4> Data bits [8]
<5> Stop bits [1]
<6> Parity [none]
<7> Flow control [none]
<8> FIFO [8]
<9> Enable Packing [N]
<a> Flush input buffer
        With Active Connect: [N]
        With Passive Connect: [N]
        At Time of Disconnect: [N]
<b> Flush output buffer
        With Active Connect: [N]
        With Passive Connect: [N]
        At Time of Disconnect: [N]
<m> Back to main menu
<q> quit


key in your selection:_
```

Figure 3. 11 Serial 0 setting

In these pages you can configuration the parameters about the serial port and hostlist.

3.2 Configuration Using Web Browser

1. Make sure one PC is located on the same network sub-net as ATC-3000
2. Open a web browser, then type in the IP address of ATC-3000 to be configured. Default user name is **admin** and default password is **admin**.
3. ATC-3000's network, link mode and COM ports settings can be configured in different web pages.
4. Click to confirm the parameter which you have changed.
5. Click "**Apply/Restart**" to save settings and reboot ATC-3000.

To do so, please follow the steps below.

3.2.1 Log in to the System

1. From web browser, type in the IP address of ATC-3000 in the URL. Example: **http://192.168.0.250**
2. The following authentication screen appears.(Figure 3.12) Please type in user name and password then click on OK. The user name is admin and password is left it blank by default.

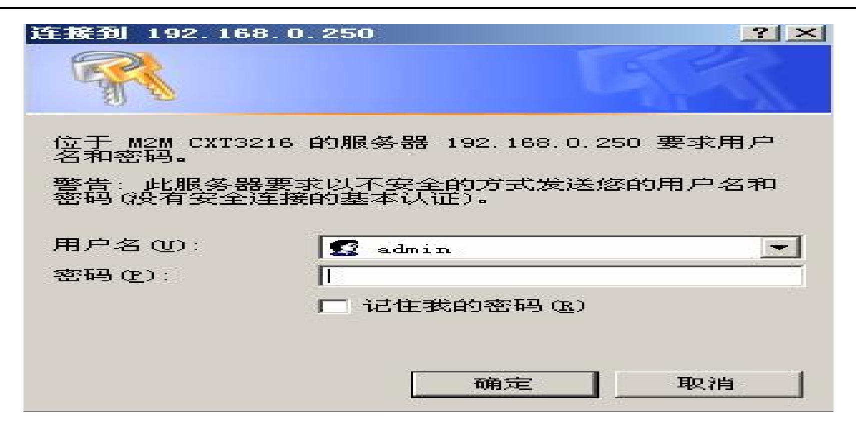


Figure 3. 12 login the system via Web

3. The following home page appears.(Figure 3.13)



Figure3. 13 Home page

3.2.2 Network setting

Click on the **"Network"** link and the following screen appears. In this page you can configuration the IP information. Figure3.14.

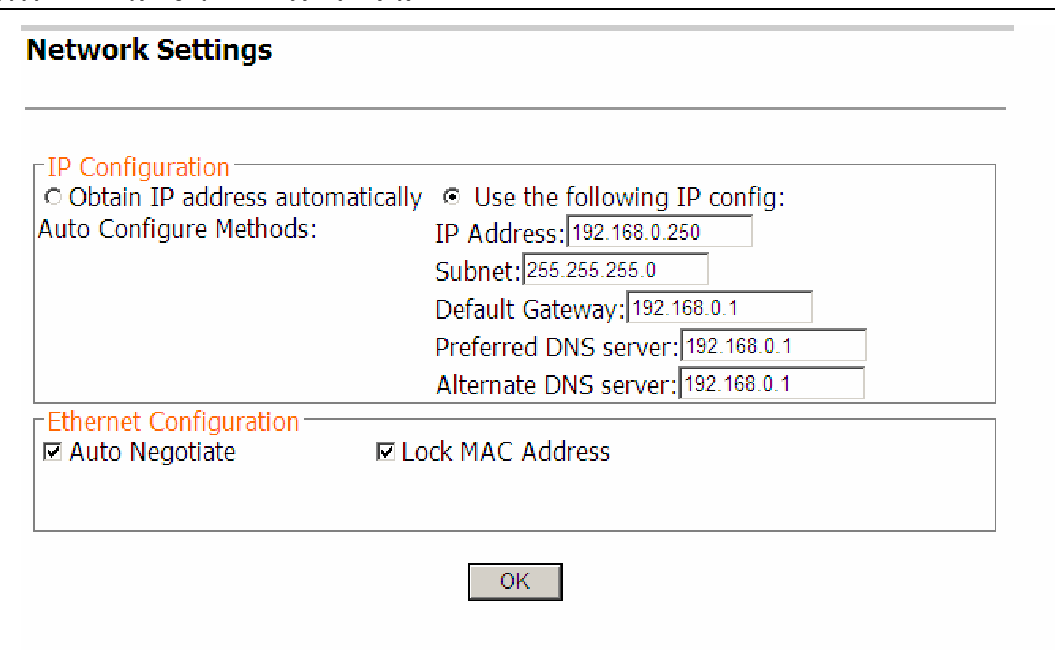


Figure3. 14 Network setting page

3.2.3 Hostlist setting

Click on the ***"serial tunnel 0"*** link and then click on the ***"hostlist"*** link you will see the figure 3.15 below.

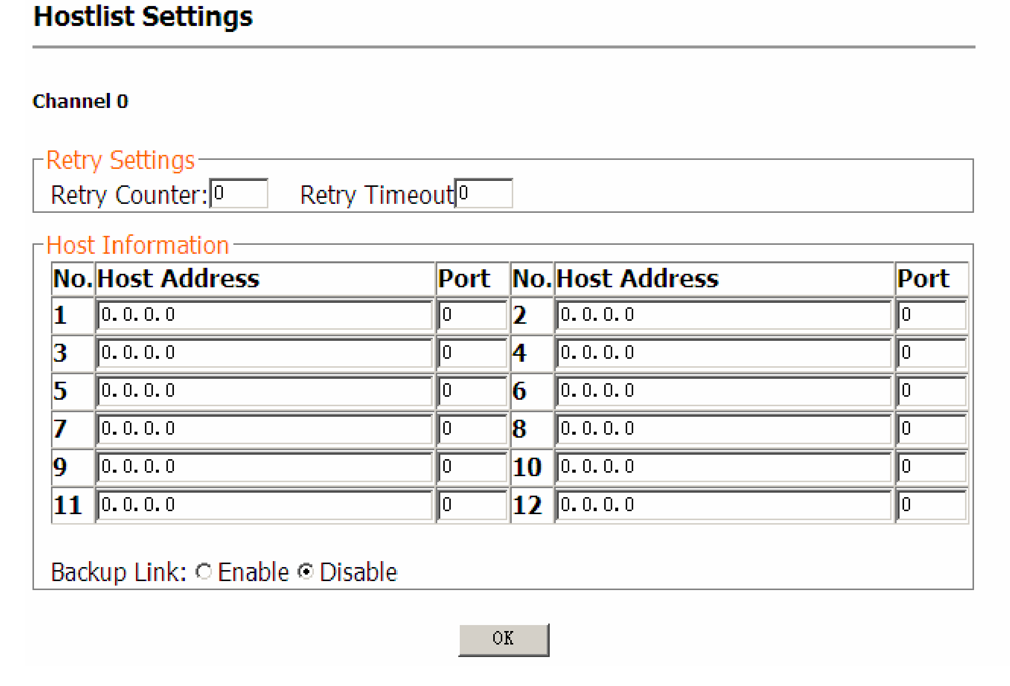


Figure3. 15 Hostlist setting page

3.2.4 Hostlist setting

Click on the ***"Channel 0"*** link and then click on the ***"serial settings"*** link you will see the figure 3.16 below.

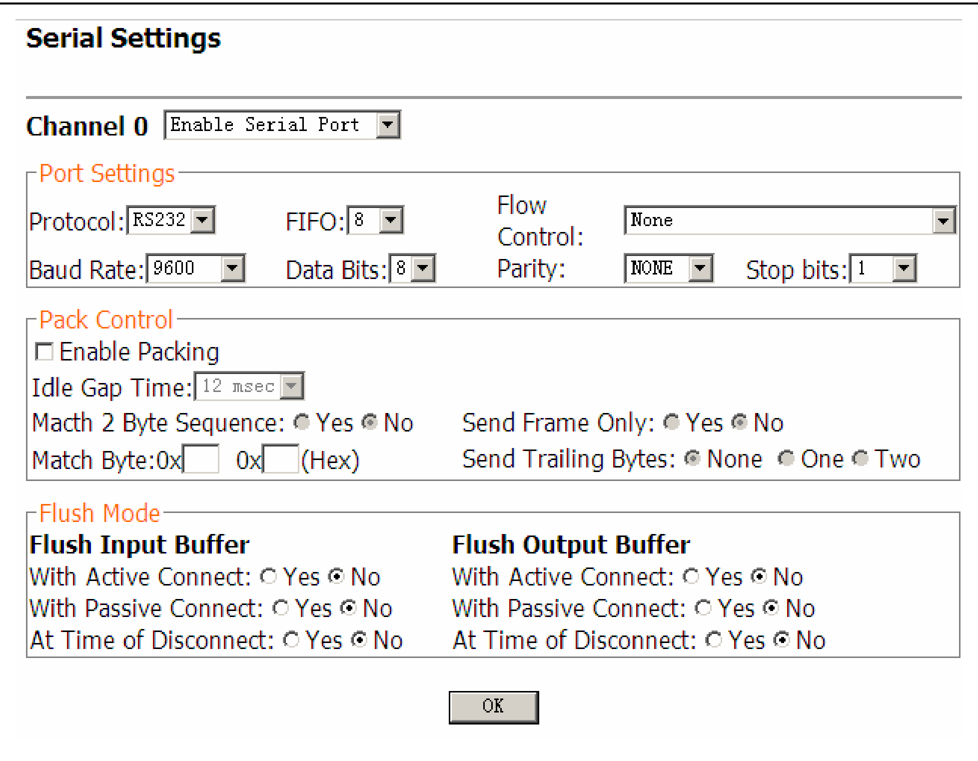


Figure3. 16 Serial setting page

Click on the **"Channel 0"** link and then click on the **"connection"** link you will see the figure 3.17 below.

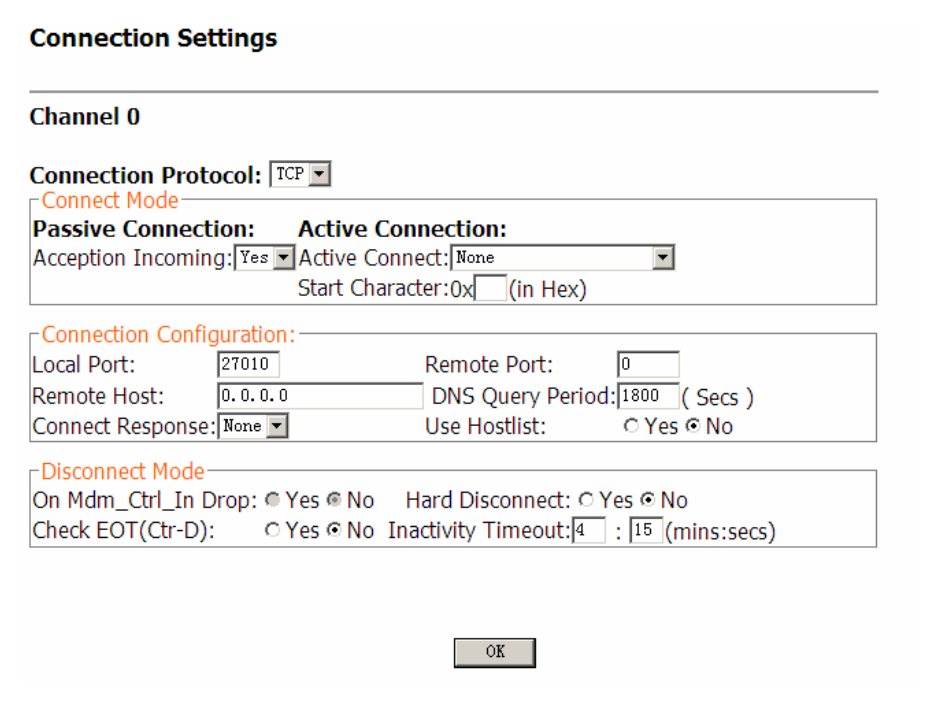


Figure 3. 17 connection setting page

In these pages you can configuration some parameters about the serial port and network mode.

3.2.5 Change Password

If you want to change the login Password you should click on the ***"Password setting"*** link. And then the page like Figure3.18 you will see.

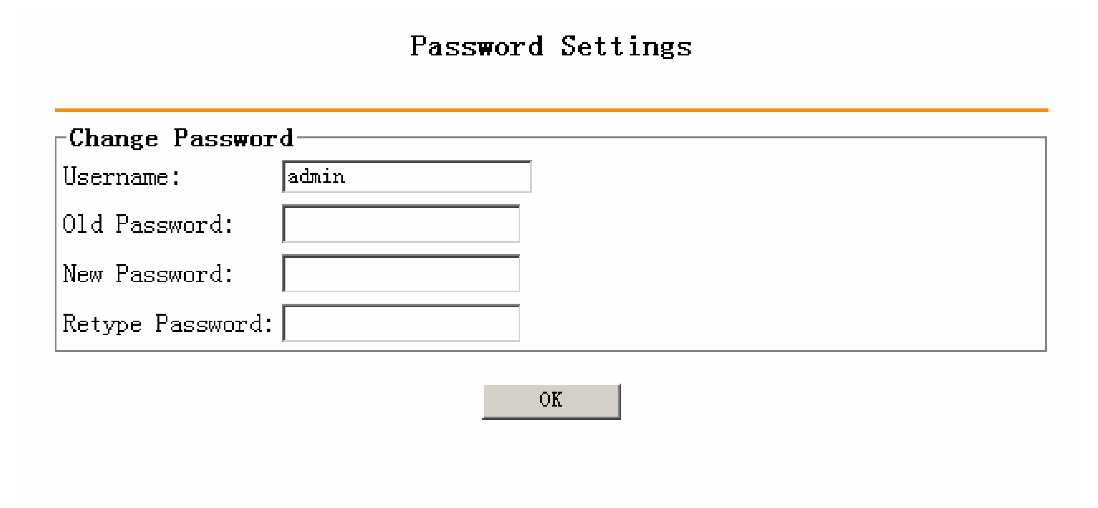


Figure 3. 18 Password Setting Page

4. Diagnostics

You can use Standard TCP/IP Utility Ping Command to diagnostics the connection.

From Windows **start** menu, select **Run** and type in "**ping <TCP Server IP address>**".

If the connection is established, the Reply messages are displayed, otherwise it will indicate Request timed out (Figure 4.1).

```
C:\WINDOWS\system32\ping.exe

Pinging 192.168.0.250 with 32 bytes of data:

Reply from 192.168.0.250: bytes=0 (sent 32) time=2ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time<1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=2ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
Reply from 192.168.0.250: bytes=0 (sent 32) time=1ms TTL=255
```

Figure4. 1 Standard TCP/IP utility ping command